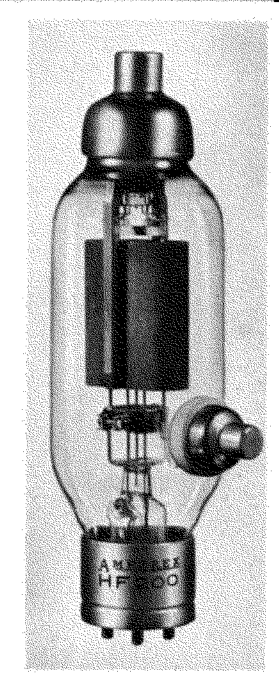
AMPEREX TRANSMITTING TUBE HF-200



High and Normal R.F. Power Amplifier, Oscillator, Class B Modulator

The HF-200 is another of the highly proficient ultra-high frequency generators of original Amperex design and development. The outstanding features of low voltage high current and a high ratio of transconductance to interelectrode capacitance are also properties of this tube.

MAXIMUM RATINGS AND TYPICAL OPERATING CONDITIONS

Audio Frequency Power Amplifier or Modulator—Class B

	Maximum Rating per Tube	Typical Operation Two Tubes		
A.C. Filament Voltage	..	10	10	10
D.C. Plate Voltage	2500	2000	2500	2500
D.C. Grid Voltage	..	—100	—130	—130
Load Resistance (per Tube) (ohms)	..	2800	4000	4000
Effective Load Resistance (Plate to Plate) (ohms)	..	11200	16000	16000
Zero Signal D.C. Plate Current (ma.)	..	60	60	60
Peak A.F. Grid to Grid Voltage	..	420	410	460
Max. Signal D.C. Plate Current (ma.)	200	380	320	360
Max. Signal Plate Input (watts)	450	..	..	..
Plate Dissipation (watts)	160	..	..	..
Max. Signal Driving Power (Approx.) (watts)	..	9	2.5	8
Max. Signal Plate Power Output (Approx.) (watts)	..	500	500	600

R.F. Power Amplifier—Class B—Telephony

(Carrier conditions for use with modulation factors up to 1.0)

	Maximum Rating per Tube	Typical Operation One Tube	
A.C. Filament Voltage	..	10.5	10.5
D.C. Plate Voltage	2500	2000	2500
D.C. Grid Voltage	..	—110	—140
Peak R.F. Grid Voltage	..	125	130
D.C. Plate Current (ma.)	150	110	90
Plate Input (watts)	250	220	225
D.C. Grid Current (Approx.) (ma.)	..	.5	0
R.F. Grid Current (amps)	10	..	..
Plate Dissipation (watts)	150	140	145
Driving Power (Approx.) at Peak of Modulation (watts)	..	6	4
Plate Power Output (Approx.) (watts)	..	80	80
F.C.C. Broadcast Rating (watts) (Nearest Classification for Final Stage Use)	50	..	..

R.F. Power Amplifier—Class C—Telegraphy

	Maximum Rating per Tube	Typical Operation One Tube	
A.C. Filament Voltage	..	10.5	10.5
D.C. Plate Voltage	2500	2000	2500
D.C. Grid Voltage	—500	—250	—300
Peak R.F. Grid Voltage	..	410	455
D.C. Plate Current (ma.)	200	200	200
Plate Input (watts)	500	400	500
D.C. Grid Current (Approx.) (ma.)	50	23	18
R.F. Grid Current (amps)	12	..	..
Plate Dissipation (watts)	150	100	120
Driving Power (Approx.) (watts)	..	9	8

GENERAL CHARACTERISTICS

Filament:	
Voltage	10-11 volts
Current	4 amperes
Amplification Factor	18
Grid to Plate Transconductance at Plate Current of 150 ma.	5000 micromhos
Direct Interelectrode Capacitances:	
Grid to Plate	5.8 $\mu\mu f$
Grid to Filament	5.2 $\mu\mu f$
Plate to Filament	1.2 $\mu\mu f$

R.F. Power Amplifier—Class C—Telegraphy

(Continued)

	Maximum Rating per Tube	Typical Operation One Tube	
Plate Power Output (Approx.) (watts)	..	300	380
Frequency Limit for Above Operation (mc.)	20	..	..

Plate Modulated R.F. Power Amplifier Class C—Telephony

(Carrier conditions for use with modulation factor of 1.0)

	Maximum Rating per Tube	Typical Operation One Tube	
A.C. Filament Voltage	..	11.0	10.5
D.C. Plate Voltage	2000	1750	2000
D.C. Grid Voltage	—500	..	..
Total Bias	..	—300	—350
Fixed Bias	..	—75	—100
Grid Resistor (ohms)	..	7500	12500
Peak R.F. Grid Voltage (per Tube)	..	475	500
D.C. Plate Current (ma.)	200	200	160
Plate Input (watts)	400	350	320
D.C. Grid Current (Approx.) (ma.)	50	30	20
R.F. Grid Current (amps)	10	..	..
Plate Dissipation (watts)	120	80	70
Driving Power (Approx.) (watts)	..	14	9
Plate Power Output (Approx.) (watts)	..	270	250
Frequency Limit for Above Operation (mc.)	30	..	..
F.C.C. Broadcast Rating (watts) (Nearest Classification for Final Stage Use)	125	..	..

Self-Excited High Frequency Oscillator or Power Amplifier

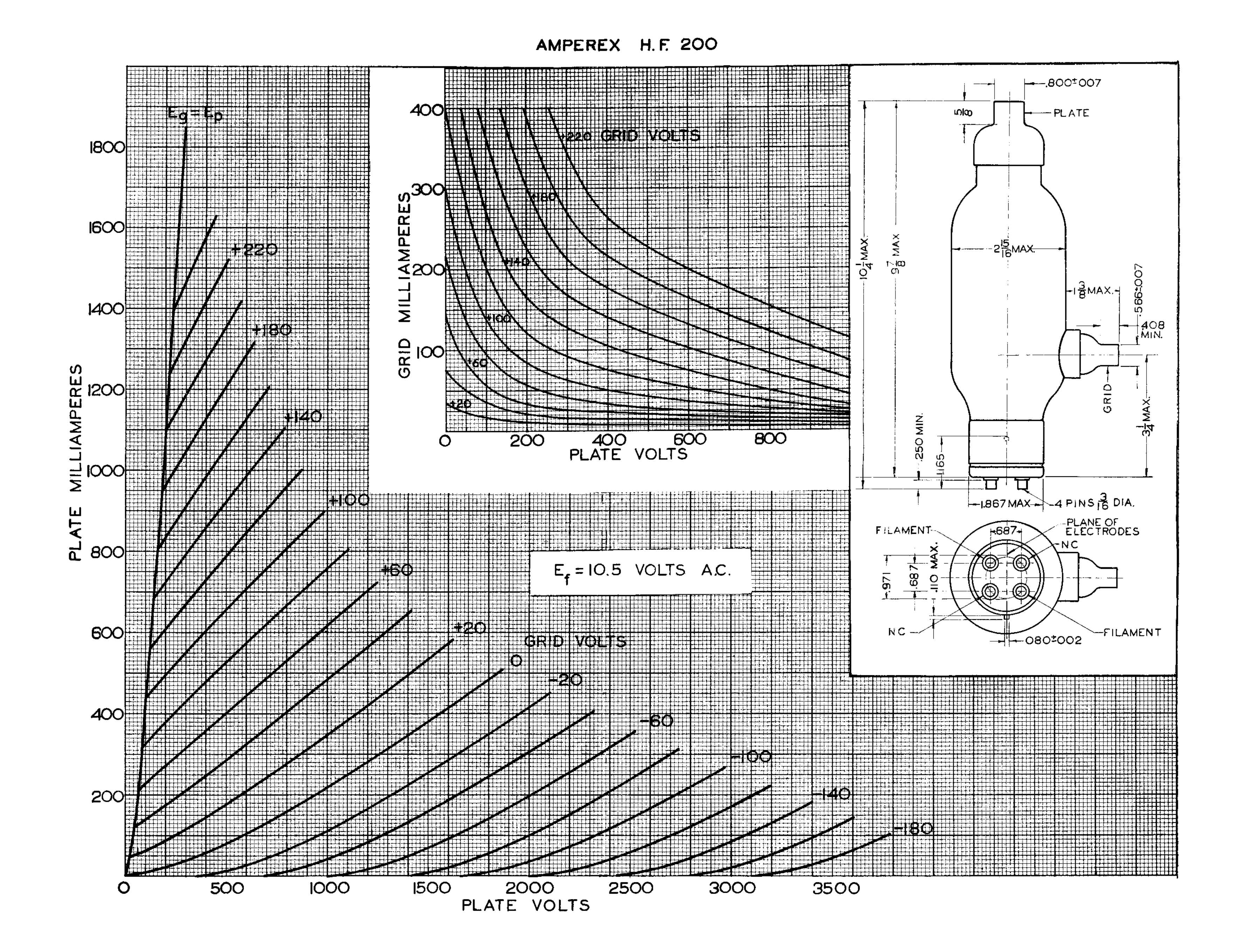
Maximum Ratings for Operations at	20 mc.	50 mc.
D.C. Plate Voltage	2500	2000
Modulated D.C. Plate Voltage	2000	1700
A.C. Plate Voltage	3000	2500
D.C. Plate Current (ma.)	200	200
D.C. Grid Bias Voltage	500	350
D.C. Grid Current (ma.)	50	40
Plate Dissipation (watts)	150	150

Typical Operation (2 Tubes in TNT Push-Pull Circuit)

Frequency	20 mc.	50 mc.
A.C. Plate Voltage	2800	2400
D.C. Plate Current	380 ma.	340 ma.
Power Output to Load	650 watts	450 watts

AMPEREX

HF-200


AMPEREX H.F. 200
PLATE MILLIAMPERES
PLATE VOLTS
$E_g = E_p$
+220
+180
+140
+100
+60
+20
0
-20
-60
-100
-140
-180
GRID VOLTS
E_f = 10.5 VOLTS A.C.
GRID MILLIAMPERES
PLATE VOLTS
+220 GRID VOLTS
.800±.007
PLATE
10 1/4 MAX.
9 7/8 MAX
2 15/16 MAX.
1 3/8 MAX.
.566±.007
.408 MIN.
GRID
3 1/4 MAX.
.250 MIN.
.165
1.867 MAX
4 PINS 3/16 DIA.
FILAMENT
.687
PLANE OF ELECTRODES
NC
.971
.110 MAX.
.080±.002